Physical and tensile properties of treated/untreated kenaf fiber and pineapple leaf fiber

ABSTRACT

This paper investigates the effect of alkali treatment on tensile properties of kenaf (Hibiscus cannabinus) fiber and pineapple leaf fiber (PALF) for the development of yarn. Basically, to prepare the biocomposite, this project utilized short kenaf fiber as the main material. The fiber was treated with 3%, 6%, 9% and 12% of different sodium hydroxide (NaOH) concentration. The size and morphology of the obtained fibers were characterized by environmental image analyzer, and the studies showed that the treated and untreated fiber had diameter between 70-100 µm. From this study, it has been found that the tensile properties of the treated fibers for both kenaf and PALF have improved significantly as compared to untreated fibers especially at the optimum level of 6% NaOH. It is also interesting to highlight that, 6% NaOH yields the optimum concentration of NaOH for the chemical treatment.

Keyword: Hibiscus cannabinus; Pineapple leaf fiber (PALF); Chemical properties; Tensile properties